In the claims:

For the Examiner's convenience, all pending claims are presented below with changes shown in accordance with the mandatory amendment format.

1. (Currently Amended) A system comprising:

a central processing unit (CPU); ~~including~~

power management logic within the CPU to enable the CPU to execute a first quantity of instructions per cycle whenever the temperature of the CPU exceeds a predetermined threshold and to execute a second quantity of instructions per cycle whenever the temperature of the CPU is below the predetermined threshold; ~~, wherein the power management logic includes~~

an artificial activity generator within the power management logic to generate artificial activity within the CPU whenever the temperature of the CPU is below the predetermined threshold to minimize current spikes within the CPU, the artificial activity being simulated instructions for the CPU; and

programmable array logic (PAL) coupled to the CPU to operate as an interrupt handler to control the CPU upon receiving an interrupt from the power management logic indicating that temperature of the CPU is at least one of above or below the predetermined threshold.

2. (Previously Presented) The system of claim 1 wherein the power management logic comprises:

a thermal sensor;

a digital filter coupled to the thermal sensor; and

an interrupt generating hardware coupled to the digital filter, wherein the interrupt generating hardware generates a first interrupt whenever the temperature of the CPU exceeds the predetermined threshold and generates a second interrupt whenever the temperature of the CPU is below the predetermined threshold.

3. (Previously Presented) The system of claim 2 wherein the power management logic further comprises an analog to digital converter coupled between the thermal sensor and the digital filter.

4. (Canceled)

5. (Previously Presented) The system of claim 1 wherein the power management logic further comprises an instruction execution unit coupled to the interrupt handler.

6. (Canceled)

7. (Previously Presented) The system of claim 5 wherein the artificial activity generator suspends the artificial activity within the CPU whenever the die temperature is above the predetermined threshold temperature.

8. (Currently Amended) A method comprising:

determining whether the temperature of a central processing unit (CPU) exceeds a predetermined threshold[[;]], and if so:

generating a[[n]] high temperature interrupt ~~if the temperature of the CPU exceeds the predetermined threshold~~;

receiving the high temperature interrupt at programmable array logic (PAL), wherein the PAL controls the CPU upon receiving the interrupt;

transmitting a signal to the CPU indicating a first quantity of instructions per cycle; and

executing the first quantity of instructions per cycle if the temperature of the CPU continues to exceed[[s]] the predetermined threshold; and

determining whether the temperature of the CPU falls below the predetermined threshold, and if so:

generating a normal temperature interrupt;

receiving the normal temperature interrupt at the PAL;

transmitting a signal to the CPU indicating a second quantity of instructions per cycle;

executing the second quantify of instructions if the temperature of the CPU [[is]] remains below the predetermined threshold; and

entering an artificial activity mode to generate artificial activity within the CPU while the temperature of the CPU is remains below the predetermined threshold in order to minimize current spikes within the CPU, the artificial activity being simulated instructions for the CPU.

9. (Previously Presented) The method of claim 8 further comprising:

interrupting the artificial activity mode; and

transitioning from a full instruction execution mode to a single instruction execution mode.

10. (Currently Amended) The method of claim 9 further comprising:

suspending the execution of code at the CPU after generating the ~~first~~ high temperature interrupt; and

resuming the execution of code at the CPU after transitioning to the single instruction execution mode.

11. (Previously Presented) The method of claim 10 further comprising:

determining whether the temperature of the CPU exceeds the predetermined threshold after transitioning to the single instruction execution mode; and

terminating the operation of the CPU if the temperature of the CPU exceeds the predetermined threshold after transitioning to the single instruction execution mode.

12. (Previously Presented) The method of claim 10 further comprising:

determining whether the temperature of the CPU exceeds the predetermined threshold after transitioning to the single instruction execution mode; and

generating a second interrupt if the CPU does not exceed the predetermined threshold after transitioning to the single instruction execution mode.

13. (Previously Presented) The method of claim 12 further comprising transitioning from the second execution mode to the first execution mode.

14. (Previously Presented) The method of claim 13 wherein the process of transitioning from the second execution mode to the first execution mode comprises:

resuming the artificial activity mode; and

transitioning from the single instruction execution mode to the full instruction execution mode.

15. (Canceled)

16. (Currently Amended) A central processing unit (CPU) comprising:

a thermal sensor; ~~and~~

an instruction execution unit to:

receive a first signal from programmable array logic (PAL) indicating execution of a first quantity of instructions per cycle in a first execution mode whenever the thermal sensor ~~measures~~ indicates a temperature of the CPU exceeds[[ing]] a predetermined threshold;[[,]] and [[to]]

receive a second signal from the PAL indicating execution of a second quantity of instructions per cycle in a second execution mode whenever the thermal sensor ~~measures~~ indicates the temperature of the CPU falls below the predetermined threshold; and

an artificial activity generator to generate artificial activity within the CPU whenever the temperature of the CPU falls below the predetermined threshold to minimize current spikes within the CPU, the artificial activity being simulated instructions for the CPU.

17. (Currently Amended) The CPU of claim 16 further comprising[[:]] interrupt generating hardware ~~coupled~~ to generate a first interrupt whenever the thermal sensor measures a temperature that exceeds the predetermined threshold and to generate[[s]] a

second interrupt whenever the thermal sensor measures a temperature below the predetermined threshold.

18. (Canceled)

19. (Previously Presented) The CPU of claim 18 wherein the artificial activity generator suspends artificial activity within the CPU whenever the die temperature is above the predetermined threshold temperature.

20-24. (Canceled)